

# AMATEUR RADIO



Published in the interests of "Amateur Radio" by the Wireless Institute of Australia (Vic. Div.), official organ of the Royal Australian Air Force Wireless Reserve.



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# "AMATEUR RADIO"

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Max. screen-grid dissipation ..	—	—	—	—	3	15	W
Amplification factor* .. .. .	6	25	35	25	225	200	
Mutual conductance (slope)* ..	2.3	2.0	5	4	1.4	1.4	mA/V
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# EDITORIAL

## "HELP US TO HELP YOU."

The number of superlatives existing in the English language is amazing. They were all used in Victoria last month, when any ham gave a critique on the first issue of 'Amateur Radio.'

Essentially the October issue was VK3 in character, but we have been honoured, and are proud to state that this journal is now recognised by the Federal headquarters as the official organ of the Wireless Institute of Australia.

Although the number of pages has increased to 24, we could easily fill thirty-two pages, or even more. However, being somewhat conservative, we have deemed it wise to see whether your friends, as potential subscribers, are going to help us to help you. More subscriptions mean more pages—more pages mean more original technical data (we have quite a lot on file and promised); more technical data and general information means more W.I.A. members; and so we go on, in an ever-widening circle.

It is indeed gratifying to the Editorial staff to read the introductory notes of the A.R.A. of New South Wales over the signatures of the President and Secretary of that division. Our thanks to the A.R.A. for this unsolicited appeal, and we hope that other States will follow the lead given by VK2.

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### A.O.P.C. (VICTORIA).

The long looked for class of instruction for the amateur operators' certificate of proficiency exam., run under the auspices of the Wireless Institute, will be starting in three weeks' time.

These classes in the past have been very successful, 95 per cent. passes having been obtained. The fees charged are the lowest of any classes of this nature.

Each pupil will automatically become a student member of the Wireless Institute, and will receive all privileges and the magazine "Amateur Radio" for one year.

The policy of this publication is a mutual one. Believing in the adage, "United we stand, divided we fall," we shall endeavour with each issue to bind closer the radio amateurs of Australia, and we know this will be appreciated by our good friends of the P.M.G.'s Department. The time is opportune to quote some lines of a letter received from the Chief Inspector of Wireless (Mr. J. Malone):—"Congratulations on the new venture, the issue of 'Amateur Radio.' The first number is a good one, worthy of its authors. There are better ones to follow. I know that because I know wireless amateurs never will let well alone; they want something better. And their happy combination of optimism, energy and ability will also ensure progress from success to success. I will look forward to succeeding numbers of 'Amateur Radio' and would be glad to co-operate in any manner practicable. Yours sincerely, J. Malone."

"Amateur Radio," the only 100 per cent. ham publication in Australia, is yours. Read it, criticise it, and become magazine conscious; then put your thoughts to paper and send them to the editorial staff.

Endeavour, by virtue of building up our subscription list, to "Help us to help you!" We promise we shall do our job. Will you do yours?

—THE EDITORS.

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Write and post a letter for prospectus, terms, and starting date to the Secretary, Class of Instruction, Wireless Institute of Australia, Kelvin Hall, Collins place, Melbourne.

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### RESULT RADIO PICTURE.

This competition was won by Alan Hutchings (3HL). The title was "Closing down, too much juice in the tank."

Other possible titles, which were not submitted, were:—"Time signal," "Automatic volume control."

We hope Alan does not practice what he preaches!

## A Self-Contained Portable Transmitter-Receiver

By VAUGHAN MARSHALL (VK3UK).

Portables, for some reason unknown, have never had a very widespread popularity here, and it is with the idea of drawing attention to one of the most fascinating sides of amateur radio that this article has been inspired. Those who have never known the thrill of a QSO out in the open, with an aerial slung to the nearest tree, have missed something that is akin only to that first DX QSO.

When VK3UK started travelling, a portable transmitter became an essential—who ever heard of a Ham who could be away from his beloved hobby for more than a week at a stretch—and the outfit described below was the result. A portable, to be a portable, must be light, compact, of rugged construction, and, above all, self-contained. This little job is in a leather case measuring  $19\frac{1}{2} \times 13\frac{1}{2} \times 5\frac{1}{2}$  in., it weighs 24 lb., and contains receiver, transmitter, A & B batteries, aerial, two pairs of phones, key and log book. It took a full week-end, with pad, pencil and paper to “dope” out an arrangement of parts so that all would fit in snugly, but the finished product has utilised every available nook and cranny, without cramping any of the components.

The design being finished, the transmitter and receiver were built on to a T-shaped frame, with the top of the T representing the front panel. Above the division is the shielded receiver, B batteries, receiver A battery, and at the rear the extra tube base receiver coils. Below the division is the transmitter, separated by a partition from the compartment containing the phones, aerial, log book, etc. Looking from the top, the front panel contains receiver aerial terminals, one each side of the reaction control, receiver tuning dial, filament control phone jack. Then come the transmitter aerial terminals, one each side of the D.P.D.T. switch (which switches the B batteries from receiver to transmitter and vice versa), milliammeter, tang tuning dial, transmitter filament switch, and finally the key.

On reference to the circuit diagram, it will be seen that the transmitter is a Hartley, using an A415 valve. This circuit was decided upon because it is easy to adjust, and, more important still, it requires a minimum of com-

ponents. The receiver is an O-V-I, and, with careful selection and placement of parts, can be built into a very small space. In this job it occupies only  $6 \times 4\frac{1}{2} \times 4$ . This leaves as much room as possible for the batteries.

The filament battery for the transmitter is housed over the valve, and is controlled by the push-pull switch just over the key. After a lot of experiment with various types of aerials a voltage fed Hertz, 63 feet long, was at last decided on. It is wound on a half-pound wire bobbin, when in the set, together with thirty feet of fishing line. When “on location,” the bobbin, to which the line is attached, is thrown over a convenient limb of a tree, or other object, and then the aerial is pulled aloft. It takes about three minutes to put the set on the air, or to pack up when finished, as the only thing to be done is to put up the aerial and plug in the phones. Change over from “send” to “receive,” or vice versa is simplicity itself, as one has only to flip the B batteries from transmitter to receiver, by means of the switch in the centre of the panel.

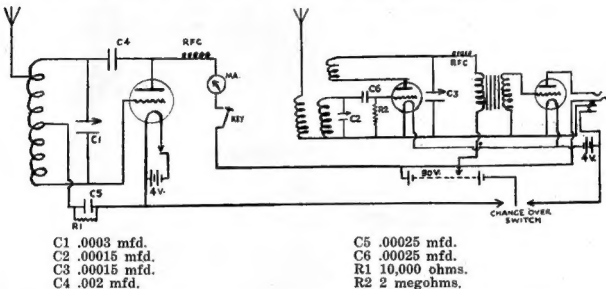
Although this little outfit is used almost solely for keeping in touch with VK3 stations, ZL has been worked on three occasions with an input power of .8 watt. The writer has consistently worked Melbourne, on schedule, from various locations around Sydney, as well as from all parts of Victoria. Anyone who has not had much experience with the capabilities and possibilities of QRP will find their ideas undergoing radical changes after a few weeks away, with a set such as this. 3.5 m.c. is the band mostly used, although a fair amount of work has been done on 7 m.c. Skip distance is, however, the main trouble on the latter frequency, for the “short haul” work to which a portable is most peculiarly adapted.

Many new features will, no doubt, present themselves to the average amateur about to build a similar set, and individual taste, in both layout and design, will influence his finished job. It must always be remembered, though, in portable construction, that one's layout and selection of parts must primarily have in mind a finished set which is compact, light, and of rugged construction. Probably the

first thing that will suggest itself to the intending builder, in the way of modification, is the incorporation of C.C. There are many things to be said for and against the use of crystal control in low-power portables, and the writer has had many discussions on the subject. However, in order to gain the necessary data, to make an accu-

rate comparison, the set described is being converted to C.C. and will be worked from Wollongong, N.S.W., during the coming Christmas holidays.

In conclusion, it should be remembered that it is essential to obtain P.M.G. permission, before operating a transmitter away from the address at which the station is licensed.



## RULES GOVERNING THE FISK TROPHY COMPETITIONS AMONG AUSTRALIAN AMATEURS.

Rule 1.—The Cup shall be competed for among the amateurs of Australia, each State acting as a team in each of the contests arranged to develop friendly rivalry among the amateurs.

Rule 2.—The trophy will remain the property of the Federal Executive of the Wireless Institute of Australia until won outright by a State Division or other body representing any State that is admitted from time to time by the Federal Executive. (A.R.A. admitted on behalf of VK2.)

Rule 3.—Contests will be arranged by the Federal Executive to take place at intervals of not less than six months and to be spread over a period of not more than three years.

Rule 4.—There will be five contests in all.

Rule 5.—The rules of each contest will be decided by Federal Executive and arranged to give an equal chance to each State.

Rule 6.—Upon a State winning the contest such State will be given the custody of the trophy until the conclusion of the following contest. Details

of each contest will be inscribed on the trophy.

Rule 7.—The State winning the contest will pay the freight on the trophy from the immediate prior holders and shall take full responsibility for its proper housing and meet all expenses.

Rule 8.—When the result of each contest is notified by Federal Executive to the holders they shall be prepared to despatch the trophy to the next holders on demand by them.

Rule 9.—The State having the largest aggregate of points at the conclusion of the five contests shall be deemed the outright winners and will receive the trophy for its personal keeping.

Rule 10.—The points for the aggregate are as follows:—Leading State, five points; second, four points; third, three points; fourth, two points; fifth, one point.

Rule 11.—East State is asked to award separate prizes to the leading stations in each contest to encourage competitors individually.

Rule 12.—No member of Federal Executive is permitted to operate his station as a scoring member of the State team.



## CUTTING THE COST OF C.C.

By VK3ML.

The time-worn discussion of crystal control versus self-excited transmitters can now be definitely concluded. Since the advent of C.C. there really has not been any great attempt to increase the efficiency of this type of transmitter beyond improving the components and layouts. It has always been the custom to employ one tube for the oscillator stage and one for each frequency doubler desired, followed, in most cases, by a neutralised power amplifier. This string of tubes has naturally frightened many hams off xtal. control on account of the high cost of components, and trickiness in operation.

Those who read Lamb's article entitled "A more stable crystal oscillator of high harmonic output," which appeared in QST for June, 1933, might have passed over it without realising the great possibilities of such a circuit. It is not intended to go into the operation of this circuit here, because it is explained fully in that particular article. However, being in a playful mood, one evening it was decided to try it out with a spare penthode on hand. The results obtained were excellent, and before the night was out the 100-watt transmitter was remodelled along the new lines.

Such an oscillator as shown in the diagram is capable of delivering enough second harmonic output to fully excite a 100-watt tube directly without the aid of the usual frequency doubler. The fourth harmonic is less, of course, but quite sufficient to control about 60 watts. With this scheme installed, it is possible to do away with all doublers, even down to 28 mc. Thus, it is hoped that this two-tube C.C. transmitter will replace the old T.P.T.G., etc., not only because it will be cheaper to install, but more simple to operate. Then, again, those who were in the habit of using 3, 4, or 5 stage rigs can save power and gear by giving this hookup a trial. This transmitter uses a 3.5 mc crystal and can be of anything up to 100 watts input if the right tube is available. However, this article caters for the more commonly used tubes, such as 210, TBO4/10, '46, etc., either straight or in push-pull, as the power amplifier

can be altered to suit the particular case; the important stage to be considered is the CO.

The oscillator tube used at VK3ML is a Mazda penthode type A.C./Pen. It is an indirectly heated valve, which is essential. However, other tubes have been tried with success, such as the 59, 42, etc., or any other type available, but it must be of the cathode variety.

The Mazda tube was being sold in Melbourne for about 7/6 recently, and has proved to be the best "buy" ever made. It will carry any voltage up to 1000 on the anode with 200 on the penthode grid. Using this tube alone and coupling the aerial coil direct on to the tank circuit tuned to 40 metres one can obtain excellent output.

It will be noticed that all the components have been rated in the diagram. Such items as variable condensers, in certain cases, can be substituted for whatever is available. They are of little importance. The oscillator has a tuned circuit connected between the cathode and ground, with the crystal between grid and cathode. This circuit is tuned to the fundamental of the crystal. The tank circuit decides the harmonic to be used. It is tuned to either 3.5, 7, or 14 mc. However, it must be borne in mind that when it is tuned to the fundamental of the crystal the cathode-ground coil must be shorted out completely, otherwise one is liable to shatter the crystal owing to the poor screening effect of the penthode grid. The circuit is then a straight penthode type as ordinarily used. Shunt feed is employed in the CO to an advantage. The dispensing of the grid choke in the PA has abolished many a worry. There is little to be said about the CO now, as the circuit is straight forward and there is nothing tricky about it. To get it going after hooking up use a single turn of wire shunted across a pea lamp as indicator, and tune the cathode coil to the fundamental of the crystal. Plenty of output may be obtained here. Then do the same with the plate coil, tuning to the desired harmonic. It will be found that an increase in output of the tank circuit is obtained when the cathode coil is detuned slightly.

The PA is quite the ordinary standard series fed type, with neutralisation. The method of neutralising is the usual, the HT feed tap being

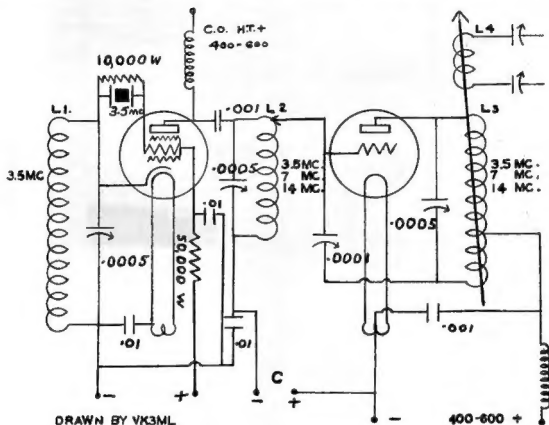
about one-third the way up the tank coil. Keying is done also in the usual way; at VK3ML it is done in the centre tap of the PA. It is advisable to mount the coils at right angles to one another if possible, as this lessens the feed back. Little need now be said of the operation of this set, as the every-day manner of operating a C.C. station applies throughout. The coils can be those

now being used, but for comparison those used by the writer are listed below for guidance.

L1.—30 turns 20-gauge bare copper wire wound on a 1½ in. former.

L2.—Do. L1 for 3.5 mc.; 10 turns for 7 mc; 6 turns for 14 mc.

L3.— $\frac{1}{4}$  in. copper tubing,  $2\frac{1}{2}$  in. diameter, 18 turns for 3.5; 8 turns for 7 mc. and 5 turns for 14 mc.



### HINTS ON PHOTOGRAPHING YOUR STATION.

Many hams have often wanted to take a snap of their gear, but have shelved the business, feeling that it was only a professional photographer's job. This is not the case, however, for even the veriest tyro can take first-class photos, indoors with an ordinary camera.

Get a 200-watt globe and make a reflector for it, by cutting a cone, about 18 in. diameter, out of a piece of white cardboard. Place the camera on a steady base and focus on the piece of gear desired to be photographed. Set the shutter at time exposure, and the

lens to a fairly wide aperture. Open the shutter and expose, for from three to six minutes, depending on the degree of light and shade in the subject. All outside light should be excluded from the room whilst the photo is being made, and care must be taken that no direct rays from the globe shine on the lens. In order that no shadows will be apparent, an extension lead should be used on the globe and reflector, and it should be slowly waved back and forth, whilst the shutter is open.

VK3UK.

(Give this a trial, fellows. we want some good photos. and descriptions of your latest gear.—Ed. "A.R.")

# VK3 SECTION NOTES

Conducted by J. H. WINTON (VK3XR).

## Key Section

A casual observer dropping in to the key section meeting on Tuesday, October 3, would have been at a loss to explain how an otherwise normal collection of fellows could be so quiet on a meeting night. Indeed, even our DX fiends (no, this is not a linotype error of "friends") and QSL hounds were effectively silenced. And what, may you ask, caused this sudden collapse of the "rag-chewing" capabilities of your brother hams? "Amateur Radio"—nothing less. The first issue of our eagerly awaited and hungrily devoured little magazine made its bow to a long-suffering public on this day, and the result far exceeded expectations.

That you will pardon our rather obvious pride in "Amateur Radio" we know, because we know that you are proud of it yourselves. But don't be mean about it. We want you to tell all the "unfortunates" who did not see the first issue just what it was like and what they will miss if they don't get their copy of this issue right now.

We had the pleasure of welcoming two new members to our meeting, they being 3CW and 3LE. Welcome OM's and our sincere wishes that very happy times will be spent by you as members of the key section.

Once again we were honoured by a visitor, this time G5TI, who is a shipboard operator. So interesting was his talk on operating conditions in England that we print the following extracts:—

"In my home town there are two other hams, G2DC and G6GZ, who, together with myself, have been experimenting with a five-metre equipment. From our experiments it would seem that power is of no advantage at all, equally good results being obtained from a small receiving valve, with 90 volts on the plate, as high-power rigs. The transmitter at G5TI is suspended on a pole 15 feet high in the back yard, and the antenna wires led straight off to each side. Horizontal aerials have proved more effective with us, and using a buzzer modulated plate supply to the transmitter, R max. signals have been received from a plane 250 miles away.

"Concerning the United States hams, I have noticed that very few build their own transmitters, and I should say that 14 out of 15 buy their rigs ready made.

"In England there are no restrictions on the times of operating unless interference is caused, under which conditions silent hours must be observed. As a 10-watt licence costs 20/-, with an extra 10/- for each increase of 10 watts, the "high power ham" is the exception rather than the rule. Also our regulations declare that a station may be operated for a total of two hours only per day.

"Unlike the W.I.A., the R.S.G.B. cannot make representations to the British Post Office on behalf of an amateur who has infringed the regulations."

After these remarks you see that we in VK are living in a paradise compared with our English friends, and, while we do not wish to be unduly pessimistic, we can see curtailment of our present liberty if all you fellows do not give your wholehearted support to the Institute.

G5TI also mentioned that "quiescent push-pull" was finding very great favour in England at present. In the very near future we hope to have some firsthand dope to give you on this subject, as a result of experiments at present under way at 3XR. For the present it will suffice to say, that quiescent push-pull is a form of push-pull audio circuit on Class B lines, but requiring no grid (input) power, and giving about twice the normal push-pull Class A audio output. It is especially suitable for 5-metre portables and battery-operated sets.

By the time this appears in print the first round of the "big fight" for the Fisk shield will have taken place. Elsewhere in this issue you will find details of this trophy. When you have read the article we feel sure that you will be a starter in the second five-point delay contest, and by so doing, helping VK3 on the way to winning the shield.

Arrangements are in hand to put the Institute short-wave transmitter, VK3WI, on the air. Schedules have not been finalised yet, but we would appreciate any offers from Melbourne

hams who can spare one or two nights per month to operate the station. Also we would be very pleased to make schedules with any station, either for a chat or general experiments. Just drop a line to the writer so that a working schedule can be drawn up without delay.

This issue contains an article for would-be photographers, instructing them in the art of taking a respectable photo. of their gear. Now there is a reason for this. The writer has heard a rumour that the mag's star reporter is going to call at several amateur stations in the near future. A short description of each station will be published in "Amateur Radio," together with any photos. available, so don't say you weren't warned. The reporter has also mentioned that light refreshments will be accepted, but not for publication.

By all accounts, "things do move" on five metres at last. The latest information to hand is that several portable and fixed stations will be operating by Christmas, and, judging by the wealth of technical data at present to hand, "Amateur Radio" will be crammed full of technical articles on the latest developments in this absorbing field. Arrangements are being made for some long-distance tests to take place, and several of the gang are considering camping in locations especially suitable for five-metre work.

As Cup Day happens to coincide with our meeting night, and we were unable to shift Cup Day, the next meeting of the key section will be held on Wednesday, November 8; that is the night after Cup Day. Don't forget that there is plenty of room for your friends who are not members. Bring them along as your guests, as there are several important matters to be discussed, and we want your support.

### VK3 Phone Notes

In reporting the notes from the phone section for the month I must first of all pass on a report from Mr. J. Kerley, of the Allocations Committee.

Due to lack of space, I will pass over the first few lines of Mr. Kerley's notes, since these only refer to 3BY and myself personally.

Allocations Committee.—At the phone meeting held on Tuesday, October 10, the Allocations Committee met to allocate frequencies for the

ensuing month. This was the first meeting of the enlarged Committee, and was highly satisfactory. The Committee wishes to draw the attention of the "gang" to the following important matter, which was overlooked at the last meeting. In future any station which runs after the closing time of any session will be "docked" half a mark for every half-minute that the station is running late. Owing to the fact that some of the commercial stations commence exactly at the conclusion of our sessions it will be seen that the above is necessary in order to curb that tendency of some of the stations to run just a little bit longer to finish that last record.

This system of penalising will come into force on the first Sunday in November.

A request.—Will the "gang" kindly announce their station call sign between each item (two-part records excepted)? This will greatly facilitate the work of the observers.

A few observations on the country stations:—3GZ, KW, EK, LM, KX, RG, LH, PY. At the observation post (Geelong) these stations were all coming in satisfactorily on a five-tube super. A new set is under construction, which will "sport" seven tubes. With this I hope to be able to listen to more of the country stations which are running during the daylight sessions.

—J. C. Kerley, Official Observer.

While on the subject of country-observation posts, I must mention that we have Mr. Ivan Hodder (3RH) and Mr. Charles White'aw (3BH), whose reports go towards compiling the country allocations.

Besides the usual business of allocations, etc., at the September meeting of the phone section, the subject of articles of general interest for contribution to "Amateur Radio," was much discussed, and let us hope that the members went away from the meeting with this idea still foremost in their heads, and that henceforth there will be a flood of articles from the phone section. The discussions which took place were mainly with regard to the subject matter of the articles. It was readily agreed that articles of a highly technical nature were wanted, but that we must not overlook the value of, for instance, a constructional description of an advanced receiver, or anything that would appeal to the majority of readers.

At this juncture I would like to remind not only the phone men, but everyone, that the W.I.A. class for students wishing to reach the A.O.P.C. standard or higher is well under way. Immediately a sufficient number of students enroll the lectures will begin. The organisers report that at the very latest the end of November will see the lectures commencing. At present there are on the rolls 15 intending students. Now, here is your chance, phone transmitters, to swell this number to a maximum of 40 in record time, by your publicity. The last instruction course held by the W.I.A. included the teaching of code, theory and practice and proved itself most successful.

With regard to the activities of the phone transmitters, again nothing of outstanding interest was received by the phone section reported via the QSO's, on Sunday nights at 12 p.m., but, of course, a lot may be attributed to the fact that the intense activities of 3BY (operated by 3TH until about 1.50 a.m.) has prevented 3DH's appearance on all but one night up to date this month. However, we may enlarge on this scheme by reporting "dope" for "Amateur Radio," also to 3BY when that station is holding the fort, as it were. DH will be listening.

One most interesting and technical (?) Q.S.O. was heard on the night of October 18, between 3FY and 3CB, or, rather, the respective Y.L.'s of these stations. The only technical remark heard during this half-hour contact was to the effect that 3FY had put two crystals together sandwich fashion, to reach the wave-length of 269.2 metres in order to facilitate reception at 3CB.

At the meeting of this section for the month the subject of crystal control, becoming compulsory, was discussed at considerable length. We all realised that this was a question which had to be decided by the majority, of course, and in any case there was sure to be someone to whom this scheme would not appeal—i.e., the man who uses a self-excited oscillator, be it alone or followed by two stages, and who is never reported off wave. However, the motion on the books to the effect that all stations using wave-lengths of from 199.9 metres up (inclusive) were to be crystal controlled, was carried, and the members were reminded to bring along their crystals to the next meet-

ing. The system to come into force in November will be that of a crystal "pool," whereby crystals will be exchanged between members whose wave-lengths are altered. As mentioned in last month's notes, new allocations will not become effective until the first Sunday in the following month. This, of course, creates a difficulty, since our meetings fall on the first Tuesday in the month. I would like to suggest to the members that serious consideration be given at our next meeting to the proposal which was brought up at our last meeting, to change the meeting night to the last Tuesday, as this would see us through the difficulty.

—Ivor Morgan (3DH).

## THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

President.—Frank M. Goyen, esq. (2UX).

Publicity Officer.—W. Moore, esq. (2HZ).

Secretary.—Robt. H. W. Power, esq., Wembley House, 841 George street, Sydney.

At the outset the A.R.A. wishes the Wireless Institute of Australia (Vic. Division) every success with their new magazine, and we can assure the Federal Executive, the VK3 Division, and the whole of the amateurs of the Commonwealth, that we are solidly behind this attempt to firmly establish a really 100 per cent. amateur journal for the Commonwealth. At the same time, every "ham" and every "ham" organisation in Australia must realise that, efficient and capable as the VK3 organisation undoubtedly is (and it is thought that they themselves will assuredly agree), it will be impossible for the magazine to thrive and prosper as it deservedly should without the wholehearted support of all those interested in its success.

The Executive of the A.R.A. is determined to do all possible in its power, within its own territory, to ensure the success of "Amateur Radio," and urges all members to do their little bit, with the same end in view. It is hoped, with the earnest co-operation of all A.R.A. zone officers, to provide the section of this publication which has been allocated to the A.R.A. by VK3 with notes of real interest to all members and

others. Our publicity officer (2HZ), unfortunately, just at the time when he would have been concentrating on notes for publication in this issue, received a transfer to the country, with consequent disorganisation to domestic and other arrangements, with the result that, possibly, our section this month will not be up to the standard, which we have laid down. However, 2HZ is now settled in his new quarters at Port Kembla, and it can safely be assured that future issues will be right up to the mark.

It might be mentioned at this stage that all notes and technical data for publication from anywhere within the State will be welcomed (and, as a matter of fact, are earnestly asked for), if addressed either to the secretary as above or 2HZ. It is particularly requested, however, that all notes be forwarded to reach us before the 18th of each month, in order to ensure publication in the following month's issue.

Now, regarding subscriptions and orders for the Journal, the Executive of the A.R.A. is particularly anxious that the number of copies sold in New South Wales should eclipse the figures of any other State, and for that reason asks that every member of the A.R.A., and all other interested readers, should "be up and doing" and forward their subscriptions at the earliest possible moment; but here note that N.S.W. readers should forward subscriptions to the secretary of the A.R.A. instead of to Melbourne, as N.S.W. supplies are being forwarded in bulk to the A.R.A.

Now, N.S.W. "hams," just one word in conclusion, and at the risk of being faced with the charge of vain repetition, "be up and doing" and assist to firmly establish the Journal of your own that you have been looking, waiting, watching and praying for, since the days when Adam and Eve used their antenna for drying their scan-ties.

FRANK M. GOYEN, President.  
ROBT. H. W. POWER, Secretary.

## ZONE NOTES

### Zone 1.

2PE, way back o' Bourke, has missed with his notes for this issue.

### ZONE 2.

Things seem to be looking up in Zone 2, and all districts, including old

man static, are coming in well on 40 and 80 metres of late. ZL's on 80 can be worked with usual ease and DX is FB. VK2BE QSO'd W9ASV on 80 and has been reported heard by two other stations on that band. Also QSO'd PK, EAR, in early hours of morning and a G last Sunday afternoon. John's gear now is three-stage xtal, using the old 210 in P.A. on full wave 80 metre Zepp for all bands and now QRL looking for somewhere to put a spare 211E. VK2KN very QRL with records and comes in FB here anywhere from 20 metres to 100 metres hi! Will soon be rebuilding TNT 45's to xtal. VK2KR active sometimes of late. What's wrong, Cess, YF'itis? Time you paid us another visit! Your absence seems to have spread to the Tamworth 6-watter 2CR. 2JF still inactive here, QRL power leaks and BCL sets. 2HC manages to get on now and then with usual FB stuff and occasionally keeps his sked with 2BE if not QRL fumigator, QSL'ing and YI's. So much for Ray. Arthur, of 2ZP and sec. op. Tommy Thungate, have been busy building talkie amplifier with all the xmtr parts, so guess the feeders may acquire some cobwebs. 2HV and Col., sec. op. been rebuilding. Harry has dusted everything from RX to PA and keeping up the high standard of Zone 2 by putting in xtal. Harry blew a couple of 280's trying to rectify 650v. a side and the smoke cleared before he could reach the switch. Says he had 'em shunted. What OM? Plates and Filaments? Or, maybe, "2HV" stands for "too high voltage"! Had short QSO with 2LM, often on with 2WH, last I heard was trying to get Duplex fone going. 2WT shows some signs of reactivity. Stick to it, OM.

Old 2SS, of Coledale, is now reactive up here at Coolah, and puts out FB xtal. sig. Another old-timer back and sure good. 2MO still puts out FB sessions, especially in morning and is even interested in "ham" radio. Guess Quirindi will have to form a QRM Club if any more get on the air here. Now four active stations here and John and myself just awaiting call signs, so 2BE will be changing call soon. I will be on CC with 247 and P.A. 210 for start, using half-wave 40-metre ant. Hope see all the gang then. All up here are behind the magazine scheme. Fine idea, so let's use it, OM's.—VK2XQ (late 2BE), Officer Zone 2.

## ZONE 4.

The Quirindi gang all fairly active and on regularly. Eddie, of 2KN, still push-pulling with 45's, and will be on xtal shortly. Pretty QRL with study of late and mostly on 80 metres. John has parked himself on 20 metres with 3-stage xtal and worked OH3CP 11 p.m. the other night and fell off the chair when he finished and heard G2ZQ calling him. John ex-2BE now VK2XQ put up new masts and back from the full wave 80 Zepp to half-wave. 2JF second op. thinking of starting up again. FB, OM, keep thinking of it, but, oh, boy! the QRM with four hams in half a mile of each other. 2EG, new ham up here, QRA, Box 12, Quirindi, has three-stage xtal 45, 47 and 210 with half-wave 40's Zepp going QRO soon a la 2BP with push-pull-parallel 46's in final attempt to drive the QRM, here, down to 5 metres. Hi! I have hit BCL trouble here and QRT till 10.30 p.m. Ray 2HC on and off often heard QSO'ing 2BE. Has visitor at present in Treblecock, "Overtone King," from South Australia, so has been on, even in lunch hours, and that sec. op. sure has nice fist to copy. Have been QSO'ing the Willis Island gang 4KR on 40 metres often of late and ICW and fone from there nice to copy and very interesting dope to hear from those boys. 2KR still active on 80 and 40 metres and entering the tests although, as Cess says, only 3½ watts. Gets out nicely, though using single wire fed Hertz. Heard 2LM often, FB fone OM, QSO, 2WA. 2CR on periodically with 6½ watts (?) xtal fone, but don't know what has happened to the Tamworth boys. No dope from 2HV except that he has been blowing things and rebuilding and 2ZP also active, I believe. QRN bad here of late on 80 metres, but Yanks FB on 40. Lots ZS, ZT, ZU, heard here on 40 metres, round about 11.30 to 1 a.m., and plenty PK, I and PA from then on. Look for the Quirindi gang at middays, OM's; the boys are always on 40 metres or some, between 12 and 2 p.m., and usually things are dead as dead.—Yours, hamfully, Ivan (2EG), Asst. Officer Zone 2

## ZONE 3.

2XO at Bellingen has also, owing to overwork, or YL's (possibly a little of each), slipped with his notes this month. However, it is hoped that his notes next issue will contain twice the amount, to make up.

Activities in this zone at present are centred around 56 mc and some FB work has already been accomplished. 2ZW and 2FN started the ball rolling on this band the other day by putting duplex fone over a distance of about three miles, between their respective shacks. 2ZW's rig consists of a pair of 210's in PP Heising mod., with a 250 and using the 40 metres Zepp as a radiator. 2FN has followed QST practice with a Unity coupled osc. modulated Heising. Much frequency measuring has been done, using Letcher wires. At present the properties of different radiating systems are being studied with a view to obtaining good signal strength at long distances. The portable rig is nearly ready, and should have an input of four watts grid modulated. Stan Crighton, of VK2KH, blew in on Saturday last and became interested at once in the possibilities of this band, and he and 2ZW spent the afternoon racing round Newcastle and outlying districts in the car with the portable 56 mc receiver. It was found that quite good signal strength could be obtained almost anywhere in the suburbs except in places where the transmitter was screened by high hills. On several occasions we were mistaken for the police wireless patrol, Hi. Mount Sugarloaf is visible from the roof of 2ZW's shack at some fifteen miles distance, and also several peaks around Barrington Tops some 70 miles away. It is hoped that next month will tell the tale of the first real dx duplex fone contact from these points. Congrats. to Charlie Headley, who has just received word of his success in the A.O.P.C. He has applied for the call of 2ZJ. He has already got a 45 ready in a Hartley circuit, a receiver (battery), and a good monitor. Anyone wanting to see a really modern three-stage xtal rig should pay a visit to 2FX, who has just completed a new job using a 47 co, 46 doubler, and a pair of 59 pp pa. It is built upon an aluminium base with plug-in coils, which can be screened with aluminium cans. Frank tells us that the set is very efficient, even though the driver coils are screened after BCL practice. It certainly is a credit to you, Frank. 2UF is to be congratulated on his good work on 56 mc. Frank believes in grid modulation for portable transmitters, and is already putting out good duplex

fone on this band. 2KB is starting to rebuild his rig using an 852 in the pa. Allan is going to screen each stage in separate aluminium cans and hopes to use 2500 volts on his 852. When are you going on QRO, Allan? Nothing has been heard of 2JZ for some time. Maybe the YL's have got him properly this time. 2KH tells us that there are quite a number of new and budding hams in the Maitland district. He hopes to have five-meter fone going shortly.—Stan Grimmett (2ZW), Officer Zone 4.

## ZONE 5.

Conditions of late have been variable on all bands, which appears to be usual for this time of the year. 80 metres still appears to be the Mecca of the fone addicts, and QRM is pretty heavy of a week-end. Lately QRN has been too heavy on this band for comfortable QSO's, so we have been exploring the 40 and 20 metres band. 40 mx has been a DX paradise for a few weeks, and, strange to say, a few R3 sigs. have been filtering through on 20 metres, which is strange for this location. As far as 20 metres is concerned on the mountains, there's nothing doing. Activity seems to be gradually centring on 5 metres, and we have been trying to get a receiver to "perk" during spare time. It goes o.k. on 7 metres, but 5 metre stations are still conspicuous by their absence. 2XJ seems to be getting his share of DX; have heard as many as five Yanks answering a call from him. 2XC also doing sterling work with the Yanks. 2RJ and 2NS, the only other active hams I know of in Zone 5, are usually heard of a Sunday evening on 80 metres with good quality fone. 3BZ is still putting out some of his usual high quality fone, and is heard here with plenty of punch on 40 mx. 2FI, with QRO, has been heard here, and it sounds the goods. Guess by the time Athol has finished installing gadgets all he will have to do is talk to the transmitter and it will do the rest, Hi! 2BP, Eric, has been putting in a profitable time on 40 metres with a four-stage xtal rig. Between August 15 and 31 his contact log shows 105 QSO's, out of which there are only 25 VK and 6ZL contacts, the rest being DX and some. The second op. worked 23 Yanks one night. Hi! Only two reports were as low as QSA3, R4, the rest ranging from R5 to R9. The best reports being R9 from W6QD, QSA5, R6 from G2ZQ,

R6 from CT1CQ, R7 from JIEE, R8 from K6CGK. The second op. was responsible for most of the hard work and reckons WAC is child's play. Hi! VK2BP, Officer Zone 5.

## ZONE 6.

Zone Officer, 2QA, of Nyngan, also missed the bus.

## ZONE 7.

Zone Officer, 2PN, of Tumut, also missed the 'bus.

## ZONE 8.

2JJ is very QRL shearing of late, which, combined with a touch of "fed-ups," he has not been on the air very much. His generator is driven by a Diesel engine, with a two-belt drive, the belts sometimes slip, and so does the output. Hi! It is also humorous when the Diesel runs out of "gas" in the middle of a QSO and Jos. has to sprint pronto to the Bowser to give her a drink. He is often so exhausted getting the engine "started" that he is QRT before getting back to the shack. Hi! No wonder you get "fed up," OM. Looks like a case of going back to QRP and work in peace with a couple of watts to a 201A (Jos. has previously had good results with this gear).

2DN is just recovering from a 'flu attack, and, with the receiver at the bedside has done more listening than sending. The following fones heard:—QSA5, R7-8, VK's, 2RS, 2QA, 2FJ, 2JQ, 2KH, 2HU, 3Py, all on 80 metres. Jack hopes to have a 3-stage cc. job on 80 metres in the near future, and when he suppresses a few BCL receivers all will be well (also a touch of that here, OM. Hi!) 2VF will be inactive until after his exams.

Noel (VK2OJ), Officer Zone 8.

## NORTH SHORE ZONE.

Back to the game again and rebuilding rx and new transmitter. Putting in 2-stage xtal rig for 80 metres and good quality fone. Retaining T.P.T.G. push-pull rig for 40 metres (210s in pp.). Building new AC receiver. Called on VK2LB at Young recently and found Allan in good heart. He has a good looking rig and is keen as mustard for skeds, etc. Also called on 2YA, the QRP artist at Rugby, via Boorowa, Rex is troubled by BCL's, although he is some miles from the nearest house. The people have a new 8-valve superhet, and it manages to drag in 2YA's 6-watt sigs. in an alarming manner.



2YA has to wait for the BCL's to finish before he can go on the air. Called on 2BP on another mobike tour. My next-door neighbour wanted to know if his receiving aerial would interfere with my transmitting. How's that for a neighbour? Another neighbour said that he was delighted to hear my sigs. in his broadcast receiver. Hope he remains in that frame of mind. 2DR (on 40 mx) recently worked a ZL on 20 metres (on harmonic and overtone respectively). ZL gave me R7 and I gave him R6.

Don. W. Reed (2DR).

## VK5 (SOUTH AUST.)

The last general meeting was held on September 27, and was attended by a large number of members, and they listened to a very fine lecture by Mr. Rupert Barker, an old Ham, VK5RM. He is an engineer with the Western Electric Co., and spoke on talkie equipment. Several of the well-known "5" gang were seen to burst into tears when he nipped the top off a "50-watter," W.E. type.

VK3's very fine magazine "Amateur Radio" was received during the month. They have certainly accomplished something, and deserve great praise for their very fine publication. We wish VK3 every success with their effort.

Although every State seems to have won the Fisk trophy already, VK5 are going to be there with their bugs running hot.

A field day was held on October 8, and experiments were carried out on the 5-metre band. VK5RD, 5RT, 5RP, 5BV, 5DA and 5WP were present, and much information was gleaned from their experiments. Here are a few comments on the doings of the "VK5 gang."

5 a.m.—Heard rag chewing with W6QD the other night; has a very fb. sig. on 7 m.c. 5AL heard one with a sig. that would make a spark transmitter green with envy. 5BC uses a mopa and gets a nice signal; also heard on tone, good quality, but modulation only fair. 5BV fb. rag chewer and has perfect dist on his bug, but slightly handicapped since he partook of a wife. 5BM Hartley, with QRP, has two sigs., one PDC, the other, well, we will not mention it here. 5BJ, "The Old Bobby," can always be relied upon to say the right thing at the right time. 5BP is doing a swell job as Federal President, spending quite a

lot of time making condenser, and velocity mikes, but has a bad memory. Once loaned a Jewell meter and forgot who borrowed it! 5CX is heard working duplex with 5WB on 200 MX; transmission excellent. 5DA uses three stage xtal. on five metres. Am told he has worked duplex on that band, also fb. worker for local T.D.S. 5DC activities confined mostly to 200 MX tone. 5DQ is now living in town, and is one of the local firm's radio experts. QRK for a 99 to come by post for QRP? 5DX is still experimenting with antennae, reported to be using the grape trellis as a reflector. How's the performing dog, Don? 5GK is now on three-stage Xtal., with nice note working plenty W's. 5GR is DX as usual. What's the matter, Gordon? Why, W.A.C. only once this year? Another hard worker for Federal Executive. 5GW is using P-P210's; gets out very well; always P.D.C. 5GH is still working W2CC and other W's on sked; probably the foremost DX station in Australia. 5HW has been working G and F stations on 20 metres, with 2 watts c.c. Fine effort, om. 5IV was heard on phone using pair 201A's; modulation deep and quality excellent. 5JA has his periods of activity, crystal (set) controlled, hi! Also has increased his sending speed to 10 W.P.M. 5JH is now on two-stage Xtal., with nice sig., heard working Z14CK. 5KH QSV to 200-meter phone band; good stuff, Keith, om. 5LG heard QSO with 5LD fb DX om; understand he is troubled with power leaks. 5LR not heard much down this way; guess this is due to skip. 5LX: Congrats., "Mac," om; am told you are a deputy R.I. now; look out, chaps, better use 201 A's when he visits you. 5MH: What's up, Dick, QYL? 5MB: QRL with A.O.P.C. classes and Air Force work; congrats., Merv., on obtaining your first-class ticket. 5MK: Guess you are the most consistent VK5 om; keep it up. Anyone wanting good rag chew; apply above. 5MV: Doing fine work as secretary of transmitter's section. Worked EAR at last; most consistent VK5 in early a.m. Using single sig. superhet. 5MW: The "pastie" king. On phone sometimes good, sometimes bad; good headphone strength around the next block, hi! 5MF: 5-stage xtal. rig can work 20, 40, 80 by throwing switches; has just passed his limited B.C. operators' exam. Congrats., Al, 5ML: Believed to have been grinding out canned

music lately. Has been working good deal early morning. 5LD. QRX for BCL receivers that do not pick up bumps. 5LB works ZL's or QRP with three stages, using '46 tubes; nice bell-like sig. 5LP on all day; uses Hartley; 23 watts input to 245; nice PDC sig. 5LN has been rebuilding, and has three-stage Xtal. rig, works as well. 5JO has new panel job three-stage Xtal. with E406 in PA; nice sig., A1. 5QR: Not heard since last school holidays; believe he is on QRP somewhere near Loxton. 5RD: Very keen on 5 metres; Don will have to give us a lecture on sigs.; he doesn't hear down there. Another keen worker for F.H.Q. 5RH: QRA now North Adelaide puts out nice sig. with mopa on QRP. 5RP: Another 5-metre enthusiasts; is also heard on 40 with well-modulated tone. 5RT: King of Haywire; has a transmitter hooked up with fuse wire; Bob shows the true experimental spirit, and always has something new; has just finished a S.S. superhet; anyone wanting duplex QSO on 40 apply above. 5RW: Not heard of much these days. 5RX: Works plenty DX and hears more than anyone in VK5; has chirpy DC signal. 5WB: 200 meter tone, above criticism. 5WJ: Heard here a few weeks ago, using Telefunken modulation, has new T.R.F. receiver. 5WP: Did some useful work on 5-metre field day; kept the gang in touch with the outer world on 40 MX portable rig. 5WR has cured BCL. QRM is heard quite a lot lately with nice P.O.C. sig. 5VK. Heard (!) regularly on Saturday nights; another S.S. superhet, which works well. 5Z puts out good tone on 7MC; uses Heising incorporating direct coupled speech amp 250 modulator; complains about being in 5MU's skip.

The conditions here in VK5 have been very patchy; DX on 40 metres seems best from 0000 to 0330, when Europe can be worked fairly easily. 20 metres is rapidly on the up-grade, as several European countries are being heard, and a few worked. The main weekly feature in VK5 seems to be the 4 and 5 way QSO's on fone; 5RT, 5ML, 5RP, 5GR, 5MD, 5MV, 5QO, and 5FM are the stations heard most, and the idea seems to be enjoyed by all. Why not come in also, you VK2, 3, fone experts? Hope all VK hams will give this fine publication the support it deserves. Tell your friends about it, and send in your subscriptions. VK5FM.

## VK4 (QUEENSLAND DIVISION)

The monthly meeting of the Wireless Institute was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, October 6, before a good attendance of transmitting and student members.

It was arranged that a direction finding field day would take place on Sunday next, October 8, and it is hoped that there will be a good roll-up. After the usual business Mr. David Laws, VK4DR, gave a very interesting lecture on his experiences with the Chapman gold expedition to the Granites. This young man acted as chief wireless operator and gave us some idea of the hardships that have to be put up with in these far-away places. He also gave us very interesting information on his wireless equipment and power supply, this being much appreciated by members present. Mr. Laws intends to continue with this lecture at the next meeting, and I am sure will be looked forward to by all members.

### Jottings.

VK4WI regular transmissions have taken place every Sunday morning 9 a.m. to noon on 205.48 metres. Reports on quality and strength are being received over a wide area. We wish to thank all those Interstate and New Zealand listeners who have reported on our Sunday morning and special night transmissions. The equipment is shortly to be removed to headquarters located at Heindorff House. Reports on 4WI transmissions should be sent to Box 1524, G.P.O., Brisbane.

4MM and 4KH intend paying a visit to Sydney shortly, and are taking a portable outfit with them to keep in touch with the boys back home.

4NG, now working on new power lines, down Coomera way, Roy intends using a portable rig. We do not know if he will be using those 33,000 volts for B supply, hi!

4AW has been very QRL lately with Air Force reserve work.

4GZ is busy working on his rig prior to erecting it at his new QRA, which will be in VK2. Hope the B batts. stand up until the A.C. is switched on.

4JM has now dumped his B batts. in favour of a 240 alternator driven by a motor bike engine, using pair '45 in T.N.T. and pair '45 as Heising

modulators; puts over phone to ZL on 80 MX, CW to VE's, W's, etc., on 40 MX.

4WH has not been heard lately, owing to 'flu.

4LS is back on the air after a long spell working A.F.W.R. skeds.

4RB is still coaching the lads on Morse each Wednesday night, and has built a vy fb condenser mike, which is at present in use with 4W1. Has duralumin foil, which is available to any of the gang. Bob is still in charge of the finances of the Qld. Division, and is never happier than when issuing receipts for overdue subs.

4LJ: They all come back, even old Leo. has decided to again enter the ranks of the amateurs; very pleased to see an old-timer back again on the air. Leo. is using 210 in T.P.T.G. with 500 volts.

4FB.—Heard a lot on 40 MX with a fb T9 sig. Fred is very popular with the boys here, turning out fb xtal. holders and gold plating mike electrodes.

4DR, testing electron coupled xtal. osc. doublers, using type 59 tubes, says they are the berries. Doubling, quadrupling in the plate circuit are easy matters with this tube, but tripling produced only poor results. Is very keen on 46's as p.a.

4VJ has been relaying 4WI 200 MX phone on 7 MC, and is getting Interstate reports of reception.

4WT.—Bill has now added another stage to his xtal. rig and says its fb. Pleased to know our secretary still finds time for a QSO and a bit of DX, hi!

4RJ was heard lately testing out a new Unity coupled rig on 20 MX with a d.c. note; believe he has had trouble with faulty valve sockets on his 200 MX rig; hope all o.k. now, om.

4BB on regularly with d.c. note on 80 MX; coming in fb in VIB.

4JB, 4GY, 4RY recently paid a visit to 4NJ, at Tallebudgera. Norm., 4NJ has not been active for some time owing to lack of power supply; however, we hope to hear him before long. On our return we tried our luck at fishing, but, as fish were scarce, we decided to return to our shacks and fish for DX, which seems more in our lines. Say, Frank, did you say Ock likes hard-boiled eggs and camp pie?

4UK is now putting the finishing touches to his new xtal. rig; expects to move to the A.C. area shortly,

when we hope to hear a fb sig. from Vic.

4JF, 4TS, 4GS are all getting their share of DX; heard 4TS and 4GS testing on phone recently and quality was very good.

## 56 MC.

Activity on this band is fast gaining popularity in VK4, the principal active hams in this particular line being 4AW, 4GK, 4RY, and 4CG. Duplex phone has been worked between 4AW and 4RY, 4RY being situated on 7 MC and who reported R7 signal from 4AW.

4GK and 4AW frequently work two-way phone at R6 over a distance of eight miles. All oscs. used are of the super regen. type. The ordinary 40 MX radiating systems were used and were found much superior to fundamental types situated at lower heights, due to the fact of their being raised above surrounding objects. The elevated pickard type of radiator and transmission line is at present being tried by 4GK and 4AW, and they expect a much more effective signal to result.

Kindly note all communications should be addressed to the Secretary, W.I.A., Qld. Div., Box 1524V, G.P.O., Brisbane.

Cheerio, 73 Cui. (R.Y.).

## VK6 (WEST AUSTRALIA)

The recent exhibition held in the Perth Town Hall was well attended, and some very fine exhibits were displayed. The Subiaco Society had a fine show of transmitters, amongst which was a fine panel rig built by 6MU. A novelty on this stand was an amateur talkie projector, which attracted good crowds. The Victoria Park Club had several fine rigs, one built by 6PK was excellent, and 6WP had a very nicely-finished rig on 245 metres. Amongst Institute exhibits was music on light by 6BB, and 6WI was in operation on 42 metres, working outside stations.

Our field day was marred by wind and rain, but several braved the elements, amongst whom were 6AG, 6BB, 6FT, 6LK, and 6RL. 6AG was the winner of the trophy presented for the day. 6BB has loaned his fine big audio oscillator for the Morse class. This uses six tubes, and a dynamic speaker, hi! 6AC has obtained work and gone to the country. 6BB has built a six-tube portable for

the aero. pageant. 6CX has got his time cut out looking after the pennies for the W.I.A. He is treasurer. 6DR is doing good work on 7MC. His son is second op, and has a fine fist. 6DX threatened a comeback, but, after being heard once has gone into the blue again. 6MU and 6FL are our active country hams. Both are heard consistently. 6AG was heard from 6FM's during the week; he is up at Wiluna installing talkies. 6HD is still plodding along, both on phone, and CW, using a pair of 245 tubes in TPTG. 6HF is quiet at the moment. Hugh is waiting for the DX season. 6JK is very busy as secretary. 6JS is handling aero. pageant radio section. Jack is very QRL this stunt. 6KB joined in holy matrimony, and the gang wish him luck. 6LJ is still making a big noise. 6MN has taken over R.A.A.F.W.R. from 6JS, with 6FO as his offside. 6RL is out for the Fisk shield.

## NORTH SUBURBAN RADIO CLUB (VK3FY)

The meetings of the above club during November will be held on Monday, the 13th and 27th, at 8 p.m. at the club rooms, 354 Rathdown street, North Carlton. Two very interesting lectures have been arranged, and should be of interest to the novice, as well as to the advanced experimenter. All interested are invited to attend.

At the last meeting held on October 16 a very enjoyable lecture was given by one of the members of our technical committee (Mr. A. Stow, 3AS) on the "New Tubes."

During the last month the following radio enthusiasts have joined our "Live Wire" Club:—W. Murden, Thornbury; G. W. Dowd, Brunswick; R. Ball, Brunswick; E. O'Donnell, East Malvern, and last, but not least, S. Saffir, aged 11, who is now our youngest member. This lad is determined to delve into the mysteries of radio, and the members are equally enthusiastic in helping him to that end.

During November the publicity phone station will operate on 190 metres (1563 KC), from 8.30 till 10 a.m., and on 222 metres (1350 KC) from 10.30 p.m. till midnight. These broadcasts are controlled by our staff of operators, namely, Messrs. A. Stow (3AS), F. Maher (3FZ) (better known as "Frankie"), R. Pinkney (3OQ), and

T. Evans (3RK). The members whose voices are heard through the "mike" are:—Dave Abbott, Stan Sanderson, the Secretary, Bill Wonder, and Jack O'Brien. Jack, I hear, is building a "crystal-controlled audio amplifier," built on a chassis 4 ft. x 6 ft., and amounts to a crystal detector, with four stages of amplification. 3OQ is changing from TNT to MOPA.

A three-stage crystal rig has been built for 3FY, and on November 24 a special DX programme will be broadcast on the 80-metre band from 10.30 p.m. till 11.30 p.m., when the programme will be continued on 222.1 metres until 1 a.m.

Applications from members will be received by the Secretary for the positions of announcers on the 200-metre band. Entrants will be subjected to a test and the "cream" will be selected. The closing date is November 2.

A party of 3FY members is contemplating a week-end trip with a portable operating on 40 metres. Howard Harrison, "the big noise," is driving the "gang" and their gear to the country rendezvous. Listen for 3FY's chirps from the portable.

All inquiries should be addressed to the Secretary at the club rooms, and will be promptly replied to.

## VICTORIAN QSL BUREAU

Cards for the following stations are on hand at the QSL bureau, 23 Llandale street, Box Hill:—

3AB, AH, AN, CG, CJ, CR, CP, DR, EM, EP, FC, GU, GX, JM, JN, JU, KU, KM, LP, LY, MI, MM, NC, NG, NR, OX, OZ, PA, QJ, RN, RQ, RT, RW, TM, TP, UJ, WH, WO, YL, YW, ZK, ZL, ZY, Messrs. Burnell, Coghlan, Mason, Henrichson, White and O'iver.

Hams and listeners having definite arrangements for the disposal of their cards are not included in the above list. The above cards will be forwarded on receipt of stamped addressed large envelope.

Stations are reminded that all cards are returned to their senders after the expiration of six months from date of receipt, and this rule is rigidly observed. The Bureau is pleased to report that, following protracted negotiations, it has been successful in inducing the R.S.G.B. to again handle cards for British non-members. The council of the R.S.G.B. is especially

thanked for their tolerant attitude, and the conciliatory nature of the negotiations.

Stations owed a card by FM8IH (and who isn't) will be interested in the following, which appeared in the September issue of "Break In," the official organ of the N.Z.A.R.T.:—"Those who still hope to get a card from FM8IH may as well abandon all hope. He is the world's worst QSL-er. The only way to get his card is to call on him personally. FM8IH is very tall and dark, about 7 ft. high; he is studying to be a surgeon, and is like most FMS, 105 per cent. tired. He has a wonderful QRA on top of a 1000 foot hill outside Algiers."

Stations signing VPIAK to VPIAN are situated in the Ocean Islands. VPIAM, Roger Greene, is at present holidaying in Melbourne.

— VK3RJ, QSL Manager.

## INTERNATIONAL NEWS

### AMERICAN NOTES.

By Harry Washburn, W2CL (by Radio to VK3RJ).

American amateurs are now under the new regulations, which prohibit the use of modulated telegraph sigs., such as RAC, of any frequency. It is a question of whether this will be enforced very strictly, therefore the general quality of W sigs. will depend upon forthcoming action to weed out the grunts, growls and mush from our bands.

The last international DX contest nicely proved the superiority of the DC signal.

DX is not very encouraging in the Eastern States, especially on 7MC. VK and ZL signals still come through consistently, but the average signal strength is less than last year. Perhaps it is caused by solar activity, which should reach its minima during nineteen-thirty-four, and render 14MC practically useless.

"QST" has a very interesting article in the October issue regarding frequency multiplication. Two tubes are all that are required to multiply down to 28 MC efficiently with power enough to run a thirty-watt amplifier on that band with the use of an 80-metre crystal. It should encourage the use of crystal on 14 and 28 MC, where the chief drawback heretofore has been the large number of doubling

stages necessary to work down from eighty metres.

Among other technical developments is a new medium power tube designed for high-frequency operation. It will take up to 1200 volts at 85 mls. on frequencies as high as 30 MC. The type number is 800. Plate and grid leads are brought out to caps on the bulb instead of through the base.

### BRITISH NOTES.

By J. Clarricoats, via G2ZQ, ZL4AO, VK3WL.

September was an uneventful month, as was to be expected, but now that the autumn season is at hand interest is taking shape on all bands.

The second of the 1933 band occupancy checks was carried out in September, and, in spite of the reduced activity noticeable between seasons, it is believed that increased activity will be reported on all bands when the summary is available. Overseas societies would find these checks of great value if arranged bi-annually.

The opening series of R.S.G.B. tests will be held during the first two weekends in November, when the 3.5 MC band will be the centre of activity.

The B.E.R.U. contest rules will appear in the November issue of the T. and R. Bulletin.

An outstanding example of the effectiveness of amateur communication has recently been demonstrated by ZL4A1 and G2ZQ. Acting on a request in the September issue of our Bulletin for an article on electron coupled oscillators, ZL4AI prepared a 1000-word article and information for circuit diagrams, which he then transmitted to G2ZQ in time for publication in the October issue. His historic feat deserves universal appreciation.

Useful articles on 56 MC gear appear in the October issue of the Bulletin, together with the first part of an article written by G6YK, describing a new receiver employing a new wave-change device.

Copy of Message sent to VK2HC re 28 MC tests of 6WY.

To Editor of Ham Magazines in ZL, VK, VS6, VU, etc., via G2ZQ, ZL4AD, VK2HC.

Please give the following fullest possible publicity:—"G6WY will call test ten on 28452 KC's every Saturday in December and January,

from 1200 to 1210, from 1220 to 1230, and from 1240 to 1250 GMT. Power is 150 watts, crystal controlled, and reports are requested from all stations hearing the transmissions. Thanks. Oms. sig. G2ZQ."

1200 gmt. is 2200, or 10 p.m. Sydney time.

See what can be done to do some real DX with G6WY.

## B.E.R.U. Contests.

3.5 mc contests.—November 4, 5, 11, 12, 1933.

1.5 mc contests.—January 7, 8, 14, 15, 1934.

B.E.R.U. contests.—February 3, 4, 10, 11, 17, 18, 24, 25, 1934.

Low power contests.—March 3, 4, 10, 11, 1934.

National field day.—June 10, 1934.

The rules for all contests, except the B.E.R.U., will appear in October T. and R.

**B.E.R.U. Organisation in Australia is as under:—**

Australian Representative. — Ray Carter, VK2HC.

Empire Link Stations.—VK2HC, VK6FO, VK3WL.

Sub - representatives. — N.S.W., VK2YC; Vic., VK3WL; S.A., VK6GR; Q'land, VK4GK; W.A., VK6FO; Tas., VK7CH.

Inquiries re the B.E.R.U. should be addressed to above officers.

## A SIMPLE OVERLOAD RELAY.

By VK3HK.

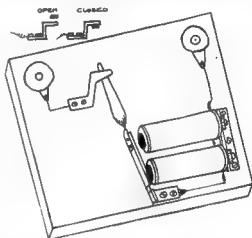
Most experimenters have at one time or other lost perfectly good tubes or other gear because they could not reach the power switch in time. It only needs a crystal or UX210 to blow up once and the unfortunate owner of the late departed looks for a means of prevention. Most buzzers, trembler bells and relays can easily be converted into effective overload relay switches in the following way:—Remove any contacts, springs or back stops, but leave the armature in position. To enable the operation point to be adjusted, the armature should be able to swing any distance up to  $\frac{1}{2}$  in. from the polepiece.

Mount the relay on a wooden base in a horizontal position—i.e., so that the armature is edge on when viewed from above.

From light, springy brass sheet cut a strip  $\frac{1}{8}$  in. wide and  $1\frac{1}{2}$  in. long. Sol-

der this strip to the free end of the armature and twist it 90 degrees (lengthways) so that the spring tension is upwards.

Next cut out of heavier sheet brass a strip  $\frac{1}{2}$  in. wide for half its length tapering to  $\frac{1}{8}$  in. at the end. The length depends on the size of the relay. It is bent to form a bracket, and the narrow end bent at right angles for about  $\frac{1}{8}$  in. The height of this bracket is just enough to hold the end of the armature extension under slight



tension, when the relay is in the open position. Screw the other end firmly to the baseboard.

Connections are through the coil, to the armature, and along it to the bracket and out.

Operation is simple; when an overload occurs, the armature is pulled toward the polepiece and the extension is pulled clear of the bracket. Its natural springiness throws it upward, and it does not make contact again when the armature springs clear. It must be reset by hand, which is no hardship, as it is not often required to work in normal operation.

The relay coil may need rewinding if it will not trip on the current desired. Variation of the gap between armature and polepiece controls the operation point or maximum current that it is desired to pass, and this is easily accomplished by bending the springy armature extension in or out.

Several relays of this type have been in use at 3HK for some months and give very satisfactory results.

G5T1 says a full beer bottle stops his aerial from swinging in the wind and keeps his signal steady.

Now we know why his sigs. swing!

# R.A.A.F. Wireless Reserve Notes

## General

Great interest is being shown in the current Adelaide-Perth pageant flight of R.A.A.F. machines. Three Wapitis and three Bulldogs took off from Laverton and Point Cook respectively on Thursday, 12/10/33, headed for Kaniva (Vic.), where they stayed the night. Before leaving the O's/C were supplied with reserve weather reports prevalent on the morning of departure.

On arriving at Parafield (S.A.) the District Commander for South Australia immediately arranged for a traffic channel back to Air Board, via the C/O's station. As a standby, in case of poor conditions, the reserve station at Alice Springs was detailed to relay messages. This was found necessary on the first morning of communications. However, conditions improved later, and R9 contact was made direct with Melbourne.

Before departing for Kalgoorlie the O's/C of the flights were again supplied with weather reports from the West.

Although, in all States but Victoria, the reserve is non-existent, in an official sense, much interest has been displayed in getting those who applied for enrolment into preliminary training by arranging watches for them twice a week, with their D/C's. The D/C's are supplying the latest information, and items of interest by broadcast methods. As soon as all are fully enrolled the allocations into sections will take place, together with an assignment of call signs and frequencies. Then the complete reorganisation will take effect.

For those who belonged to the old R.A.A.F. Amateur Wireless Reserve and for those in the present reserve there was conducted a test broadcast for the Ramsay trophy, which has been donated for the most efficient member in Australia each year. The first test was a failure owing to poor conditions, but it will be competed for again from Laverton and transmitted on three frequencies simultaneously. Higher power and better hours should prove fair to all localities.

## District Notes.

**2nd District (N.S.W.).**—This district promises to develop into one of the most active of all districts, judging by the applications for enrolment

and the amount of time the acting District Commander (2BP) has devoted to the Reserve. Like the 3rd District, N.S.W. is fortunate in having an R.A.A.F. Squadron at Richmond, from whom we can expect much co-operation. This may be extended to the 4th District (Queensland) at a later date.

Already, broadcasts are being conducted weekly, and a large number of amateurs are being given preliminary training that will enable them to step right into their positions as sections. The district is well represented all over the country by intending members, who have it in their power to establish an excellent network of communications.

**3rd District (Victoria).**—The main item of interest this month is the Ramsay trophy contest, which was held on October 1. Unfortunately none of the Victorian country stations were able to get "solid copy," owing to the fact that they were in the skip area for the first two messages, on 6555 kc. and 14120 kc. and QRN made decent reception an impossibility on 4155 kc. In consequence, the test was cancelled and another will be held on October 22, when the transmitter will be keyed simultaneously on three waves. It is to be hoped that all Australian districts will get a QSA 5 signal, so that they will all stand an equal chance. The test consists of a 250-word message, in which both procedure and text are mis-sent. Anyone who has not copied a message, in which the words contain deliberate errors in spelling, has no idea how really difficult it is. One finds it essential to copy "right up" to the sending, instead of about three words behind, as in normal copy, and it is absolutely fatal to anticipate a word. Nevertheless, it is a wonderful test of copying skill, and after the experience gained in the last test all stations are eagerly looking forward to the next, especially as Victoria is determined that one of its members will be the first holder of the truly magnificent trophy.

All sections have now settled down into their old swing again after the convention, and traffic is "slipping" through even faster than before. Conditions are gradually getting worse on 3.5 mc. in the mornings, and often

a message will have to be relayed twice in order to reach its destination. However, a traffic net, to be efficient, must be able to function 100 per cent. under any circumstances, so the changing conditions only have the effect of giving the sections more practice, both in correctly routing traffic and also in copying weak signals "solid."

Every week a bulletin is sent out to each section commander, containing explanations of many knotty problems in procedure, hints on improving the efficiency of the sections, and also news of forthcoming events. Most of the sections are now running evening schedules, weekly, in order to increase their efficiency, and also lay plans to steal a march on their rivals for the "crack section" trophies, which will be presented at the next convention. The inter-section rivalry is very keen, and the judges will have an unenviable task, next June, to decide the winners.

The convention has stimulated a considerable amount of interest, and a number of new members have been enrolled this month. It will take some little time to get these stations on their frequency allocations, and familiar with the procedure and working of schedules, but we hope to have two complete new sections running within the next few weeks. They have some hard work ahead, to reach the high standard of efficiency set by the older sections, but, if enthusiasm is any criterion, it will not be so very long before the established sections will have to look to their laurels.

Any amateur desirous of joining, write immediately for full details to the District Commander, 3rd District R.A.A.F.W.R., 5 Fordholm road, Hawthorn, E2.

—V.E.M.

### 4th District (Queensland).—

This district has been active for some time under the guidance of the Acting District Commander (4AW), and now has a well-organised system. To date this is the only district except Victoria that is organised into sections, and the members of which have R.A.A.F. call signs. Great opportunities exist for the Queensland members, because of the continuous activity of the R.A.A.F. in that State. With stations widely spread over the district, and at important centres the reservists have a splendid opportunity of making their district of great

value to the Air Force. Many of the members are proficient in Air Force procedure, and any persons intending to join will be welcomed with the amateur spirit and will find it very easy to get along with those already in the organisation.

### 5th District (South Australia).

Unfortunately, this district has not been blessed with more than a few country members, which rather limits the opportunities. However, most of the activity takes place in the metropolitan area, as the machines pass over Adelaide and seldom north of that city. However, to have a few members north is particularly desirable when flights from Darwin-Adelaide occur. Nevertheless, the member at Alice Springs has already proved invaluable, by his co-operation, to Adelaide members.

5MB, the Acting District Commander, has assured me that things are going to brighten up in S.A. again, and much enthusiasm will be put into the show in future. If all the country members in this State realise how important this district is to the R.A.A.F. they will surely buck up and make it "untouchable" from the efficiency standpoint. 5MB and his staff of deputies are proceeding with the training of newcomers, and the prospects of the 5th District appear to be bright.

### 6th District (West Australia).

From a communications viewpoint the 6th District is the most beneficial because of its geographic situation. When aircraft are operating away from their base in W.A. reserve co-operation is essential. This can be well supplied, because of the excellent localities of some of the members. The whole of the north-west coast is well represented. The metropolitan stations are being reorganised under the control of 6MN, who recently took over from 6JS, who, owing to pressure of business, could not spare the time he would have liked to put into the reserve. However, 6JS has trained some of the best operators in the West, and with this groundwork and the intense enthusiasm that is being displayed over the official organisation, the 6th District will give the others something to look up to. Bi-weekly training is about to commence from the Acting District Commander's station (6MN), and from that of his deputy (6FO), and items



of interest, together with instructions, will be broadcast.

## 7th District (Tasmania).

Being such a small State in area, the same method of sectionalisation as with the other districts cannot be employed. However, the island has been divided into two main sections—north, under the control of 7JW, and south, under 7CS. The whole district is supervised by its Acting District Commander, 7RC, who states that his district, although small in number, will outdo any other as far as efficiency is concerned.

Here, again, preliminary training is taking place by the broadcast method bi-weekly until everyone is fully enlisted.

## HAMADS

TO LET.—Rent free, 2000 KC's on the 10 MX band. Join the stations at present located there. QSW 10 MX every Sunday a.m.—QSY.

WANTED.—Active Xtal. ground to near 7000 KC, or 3500 KC. Must be cheap. VK3OF, 207 Richardson street, Middle Park, Victoria.

FOR SALE.—45 ft. mast, 4 x 4 oregon, tapered and painted white, hinged to solid jarrah foundation. Professional job, in good condition. What offers? J.C.J., care of W.I.A. (Vic.), or phone Hawthorn 3318.

NAME PLATES for instruments, dials, etc. Same style as Lapel call signs described October issue, but suitable for screwing on panels. Blue or black background, letters bright aluminium. Price, 6d, each. Write, call or see VK3PS.

FOR SALE.—250 watt Transmitting Valve, little used, £5. Six new "General Radio Variable Transmitting Condensers," 2000 volts, .0001 MFD, 15/- each. Quarts xtals, 3.5 MC, guaranteed, or money refunded, 15/- each. Limited number of thick blanks for 200 metres, 5/- each. Will exchange two 3.5 MC xtals for two Philips Valves, A442, B443. "VK3HW," Greenhill street, Castlemaine.

SPECIAL FOR SALE.—Well-known 200 MX 25-watt xtal transmitter, Heising, modulated with 3-stage Audio Amplifier. "VK3CR," C/o W.I.A.

It is unnecessary to mention that, being an island, Tasmania would depend entirely on its radio communications should the usual channel fail. Another reason why the Air Force should consider the reserve an invaluable adjunct to its activities, particularly with regard to this State.

In future the district notes will be written by the District Commanders and forwarded to the Reserve Headquarters, to arrive not later than the 23rd of each month. All members are requested to forward a short note by W/T concerning their activities to their D/C's correspondingly earlier. The reserve is a signal organisation, and consequently such material should be supplied by W/T and not mail!

## CORRESPONDENCE

### "QTC"—10 METRES.

Dear Fellow Hams,—I take this opportunity of appealing for your co-operation on the 28 M.C. band during the coming months. The 10MX "DX" period is just about to set in, and any time Interstate signals are expected to be heard.

This band is never deserted during any Sunday a.m.; VK3CW and VK3OF are always on. 3NM and 3JJ are heard occasionally. Interstate we have VK4XN, 5HG, 7NC, 2BX, 2DQ, 2ZW, and a number of others; VK6SA may be on. Internationally we have ZL1AB and quite a few ZL hams, while American ears await our call.

Last year good work was performed on 10MX, and there were quite a few stations working there. All States except VK6 were reported from ZL, while VK3BQ had a qso with ZL1AB. This year we want a VK to qso W, J, and others.

So, hams, polish up your gear and make this year a bumper for 10 M.X. and show that this band knows no depression.—Yours, etc.,

MICKEY, VK3OF.

Any of the gang on 80 MX phone wanting a detailed report on their transmissions, advise Pat Greenough, of Dandenong, Victoria. Pat is incapacitated through war injuries, and his receiver is going all day. We are told he is a specialist on 80 MX phone reports. Send him a card and make a sked. with him, or, better still, give him a shout over the air.

# RADIOTRONS

FOR

## AMATEUR AND EXPERIMENTAL RADIO USES

● RADIOTRON UX-841 is a 3-electrode high mu, voltage amplifier tube, designed primarily for use in resistance-coupled circuits. It is also useful in amateur transmitters as a crystal-controlled oscillator, and as a radio-frequency doubler and amplifier. Filament volts, 7.5. Power output (Class C), 10 watts.

● RADIOTRON Type 852 is a 3-electrode 100 watt transmitting tube designed for use as an oscillator and r-f power amplifier, particularly at frequencies above 3000 kc. Filament volts, 10. Normal plate volts, 2000.

● RADIOTRON Type 864 is a 3-electrode tube of the general purpose receiving type, especially desirable in services where freedom from microphonic disturbance is required. Filament volts, 1.1. D.C. maximum plate volts, 135.

● RADIOTRON Type 865 is a 7.5 watt screen-grid, low-power transmitting tube for use as a radio-frequency amplifier, especially for frequencies above 3000 kc. It is also very useful as a crystal-controlled oscillator. Filament volts, 7.5. Maximum plate volts, 500.

● RADIOTRON Type 866 is a high-voltage half-wave rectifier tube of the hot-cathode mercury-vapour type. Its large D.C. current capacity and its low tube voltage drop make it ideal as a rectifier for the medium-power amateur transmitter. Filament volts, 2.5. Maximum peak inverse volts, 7500. Maximum peak plate current, 600 ma.

---

*For additional information on these types write to*

**AMALGAMATED WIRELESS (A/SIA) LTD.**

**WIRELESS HOUSE, 167-9 QUEEN STREET,  
MELBOURNE.**

● Ask for RADIOTRON Characteristic Data Chart.

**HEMLOCK** PTY. LTD. 211 Swanston St.

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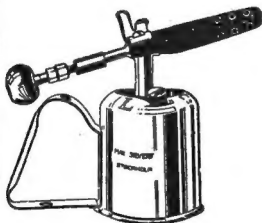
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16/6	244V	UY	E432		Spec. Det.	7/6
18/-	S4V	UY	E431	MS4	S.G. H.F. Amp.	7/6
18/-	S4V	Eng.	E442	MS4	S.G. H.F. Amp.	7/6
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# HAM HARDWARE



### Sievert's Petrol Blow Lamp.

Capacity 1-3rd pint. No pump required. Needle valve eliminates the use of prickers for the nipple. Price, 8/6.

### Diagonal Cutters.

German, 1/3, 1/11; Swedish, 3/.

**Spintite Set.**

With 3 sockets, taking  $\frac{1}{8}$  in.,  
5/32nd in., 3-16 in. Nuts. 3/6  
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### Metal Thread Screws.

All sizes and shapes.

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Special Hard Drawn for Aerials,  
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1-16 in. to 3-16 in., 1/6 set.

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Suitable for Tank Coils, Sheet Aluminium, all gauges. Cut to your size.

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384 BOURKE STREET, MELBOURNE.

Central 9, 10, 11 (3 lines)